



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daryoosh Vakhshoori et al.
Serial No.: 09/639,678
Filing Date: 08/11/2000
For: METHOD FOR MODULATING AN
OPTICALLY PUMPED, TUNABLE VERTICAL
CAVITY SURFACE EMITTING LASER
(VCSEL)

Group Art Unit No.: 2815
Examiner: J. Nguyen
Attorney's Docket No.: CORE-57

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED
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October 9, 2002

(DATE OF DEPOSIT)

James A. Sheridan

(NAME OF ATTORNEY)

Assistant Commissioner for Patents
Washington, DC 20231

James A. Sheridan 10/9/02
(SIGNATURE)

October 9, 2002

(DATE OF SIGNATURE)

Sir:

RESPONSE

This is in response to the Official Action currently
outstanding with respect to the above-identified patent
application.

In the outstanding Official Action, the Examiner
rejected claims 1 and 2 under 35 USC 102(e) as being
anticipated by Kullander-Sjoberg et al.

In response, Applicants respectfully traverse the
rejection of claims 1 and 2 under 35 USC 102(e) as being
anticipated by Kullander-Sjoberg et al.

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The present invention of claim 1 comprises a method for modulating the output of an optically pumped, tunable VCSEL. This method comprises the steps of (1) optically pumping the VCSEL with a pump laser so as to cause the VCSEL to generate an output; and (2) modulating the output light power of the pump laser so as to modulate the carrier population in the VCSEL's active region, whereby to modulate the output of the VCSEL.

Applicant's believe that Kullander-Sjoberg et al. discloses a pump VCSEL operating at 980 nm, which acts as an optical pump to create a population inversion at the active layer of a main VCSEL, and the main VCSEL is modulated by using an external electrical field applied perpendicular to the active layer of the main VCSEL. At column, lines 48-50, Kullander-Sjoberg et al. states "the optical output will therefore be modulated by the electric field and not as by injected carriers." It is Applicants' belief that this operation of Kullander-Sjoberg et al. teaches away from the method of claim 1 of the present invention in that the present invention comprises the step of modulating the output light power of the pump laser so as to modulate the carrier population in the VCSEL's active region.

Accordingly, claim 1 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

The present invention of claim 2 comprises a method for modulating the output of an optically pumped, tunable VCSEL. This method comprises the steps of optically pumping the VCSEL with a pump laser so as to cause the VCSEL to generate an output; and (2) applying a voltage across the VCSEL's

active region so as to alter the optical power circulating in the VCSEL's cavity, whereby to increase or decrease the output power of the VCSEL. It is Applicants' belief that Kullander-Sjoberg et al. discloses a VCSEL designated to resonate at a given wavelength. Applicants' further believe that Kullander-Sjoberg et al. does not disclose a method for modulating the output of an optically pumped, tunable VCSEL comprising the step of applying a voltage across the VCSEL's active region so as to alter the optical power circulating in the VCSEL's cavity, whereby to increase or decrease the output power of the VCSEL. Accordingly, claim 2 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

In the event that any fees may be required in this matter, please charge the same to Deposit Account No. 16-0221.

Respectfully submitted,

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